AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

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Apropos of Standardization and Conditions to Be Analyzed

No factory can make dyes absolutely uniform, like books and moving picture films, they must be edited, i.e., standardized. The safest way to do this is by mixing the output of a fairly long period, which gives a fair representation of the factory output which is not so hard to duplicate. At present the average small factory, in taking up the manufacture of a new color, has at the initial performance the head chemist, who gives it particular care or uses a lot of raw material that is supposed to represent what they are going to get in the future. The result is that the lot turns out extra fine and is made a type—future lots seldom come up to this lot, many have had this experience. There is always a temptation to sell an extra quality batch and make it the standard and when the regular run fails to come up to this standard to doctor and patch it up somehow. A lower standard with greater uniformity and conformity would be better appreciated by the customer.

The customer should be educated also and shown that it is more to his interest to use the American types as they are and not require them to be shaded and touched up to match some foreign type. Any dyer who is worthy of the name can use colors in combination, when they are near the shade he requires, providing they have the necessary properties, but the one who demands an exact match for the foreign product he is using is confessing his lack of ability.

Before the war, the importation of dyes offered a fine opportunity for fraud, if any of the foreign houses and their American branches had been other than honorable gentlemen. Concentrated products could have been sent over and billed as single strength and the duty thereby divided by four or five. Then there could have been places where the reduction to type was made and they could have easily undersold the American product or the Swiss import. After the war, there should be a man who really knows dyestuffs at every appraiser's store in the customs service, to simply remove the temptation, as it were. It would be unwise to say that this actually was done because direct proof is lacking, and it is unjust to condemn anyone on circumstantial evidence, but that does not prevent anyone having their own opinion.

Not Written in a Spirit of Criticism

The foregoing remarks are not offered in any adverse spirit of criticism, but to suggest what may be expected and to point out the weak points where the enemy will most likely attack. At the present time the entire organizations of the German branch houses all over the world are trying to hold to-

AN ANNOUNCEMENT

Owing to the expansion of our business we have erected and own three plants, capitalized at $100,000, in which we manufacture

INDIGOTINE
ALIZARINE
and
SULPHUR COLORS

ATLAS COLOR WORKS, INC.
322 9th Street, Brooklyn, N. Y.
PLANTS, BROOKLYN, N. Y.

gether, keep their customers and a nucleus of sales force, so that as soon as they are able to begin again on the old basis, they will have a veteran army to confront those who are now content to go on making money out of the present opportunity and not preparing for the future.

One large organization has been perfected and is in readiness, those which will come later will need to learn a few things that cannot be worked out in the laboratory, but the small factory of today need not pass out of existence if it will settle down to making high grade goods of any kind at all, but which are the best of that kind and noted for their uniformity. Before the war Dr. Remy at Crefeld made and did a large business in Malachite Green and Methyl Violet with the result that many of the large factories preferred selling his products to making them themselves. It is always better to do one or two things and do them well than to have an extensive line of second rate productions.

After all this the greatest thing is a *protective tariff* that will give the necessary confidence to capital and after the world has been made safe for democracy, will make the United States safe for business.

A Chemical War—Commercially and Otherwise

This is a chemical war in many less spectacular ways than the manufacture and effects of explosives and poisonous gases. Among the less conspicuous are the purely textile applications of chemistry. Of these, perhaps first in importance is the bleaching of cotton for guncotton manufacture. This already runs into a tremendous tonnage and while it is carried out along the same general lines as other cotton bleaching, the requirements are very exacting and the product is subjected to careful control by chemical analysis for residual impurities. Another almost equally refined product is absorbent cotton, bleached in the same kiers as guncotton, but for quite the opposite purpose. It, too, has to meet certain requirements that are best defined in the terms of chemical analysis. If these requirements are met, the properties of the product and efficiency of the bleach are then beyond dispute.

There are government orders for millions of yards of gauze for surgical use, and other orders for immense amounts of cotton goods for tents, light weight clothing and many other purposes. As far as this has to be bleached, it should be subjected to careful analytical control by tests of solutions as they are being applied and further tests of the goods after each operation, to be sure that any residual acid, alkali or chemic is thoroughly removed after doing its work and before it can cause any injury. Every yard tendered or otherwise damaged is not only a waste, but cuts down production, perhaps at the very time of greatest need. Such trouble can be almost entirely eliminated by proper supervision and at comparatively little expense. Similar methods are already followed in up-to-date bleacheries and the fact that such firms employ them should be sufficient recommendation.

Possibilities in Dyeing

Coming to the dyeing of khaki and olive drab, there are new problems for

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SIZING SPECIALTIES CO.
INCORPORATED
JERSEY CITY NEW JERSEY

the chemist as well as the dyer. Mineral khaki dyed from chrome and iron is a separate problem in every mill and we may almost say, on every machine. It can be done in a variety of ways and on different types of equipment. Perhaps a little search will reveal possibilities in discarded padders and agers that can be rebuilt to dye this government tent cloth.

Sulphur dyes in their present stage of development are also full of possibilities for chemical research. New dyes, slightly faster, are always welcome and there is plenty of opportunity for improving the methods of dyeing them in the piece to get more uniform and level results as well as to reach the standard set by government tests. This is for the most part purely chemical work involving, first, a study of colors and their impurities with the effect of the latter on dyed results, and, second, a study of additions to the dye bath, involving a search for materials that will retard oxidation, or more properly control it, and at the same time promote penetration and levelness.

At the first Exposition of Chemical Industries in 1915, there were good exhibits of American-made dyes, but nobody had much of anything to sell. Now we have vastly larger manufactories and a wide range of available colors to select from. To get a satisfactory olive drab on wool, even with all the German coal tar dyes available, was a rather formidable task if the utmost requirements of the specifications were adhered to. Naturally with fewer brands on the market it is more of a problem. There is no good reason why chemical research should not, however, be especially directed toward the development and manufacture of dyes for these special shades. While at present millions of yards are being colored, the results are not any too satisfactory and an extended organized investigation covering all available natural and synthetic dyestuffs of reasonable fastness might finally yield some excellent combinations. Often colors that are inferior in some one particular will show up well in compound shades, the deficiency being masked by other dyes in the formula that are fast in the particular respect in question.

There is still some trouble in dyeing blues. The amount of indigo available for raw wool stock is insufficient and the dyeing process slow. To expedite production it may yet be allowable to color some classes of goods with alizarines or other more available chrome blues in the piece. Meanwhile a little in the laboratory with a view to having suitable formulas in readiness may be well repaid in the saving of time later. The success of the American dyestuff industry is assured beyond a doubt. Already it is said on good authority that about 70 per cent. of our goods are dyed satisfactorily and most of them with our own dyes, the balance of less than one-third being colored with dyes not quite as suitable for the purpose.

Conditions, however, may soon warrant the working of foreign patents for the manufacture of fast vat dyes of the hydron and indanthrene types, and some other particularly desirable patented specialties. The former are already being brought out in England. We should be able to work these out as well as the proposed manufacture of some synthetic drugs not now available and covered by German-owned patents. These fast dyes with a few other items not yet attainable will give us a practically complete range.

Chemist in Conservation

The textile chemist's task is not only in the direct preparation of materials needed in the conduct of the war. Conservation is more than ever the cry. Shoddy usually presents difficulties in carbonizing, stripping and redyeing, all of which are more problems for the chemist and dyer.

Conservation and food control may lead to restriction of the use of starches. Reports are already in circulation that wheat starch manufacture will be limited. From starches made from grains and other materials suitable for human food, it is then only a short step to those of more particular value as cattle feed. Present prices of grains are not only making beef and dairy products high, but threaten a real shortage. If these considerations force Government action on starches it seems that rightfully this should apply first of all to the more heavily starched finishes where large amounts of farinaceous materials are used and

last to warp sizing where starch is more of a necessity. In some cases it may be possible for the present to exchange one form of starch for another.

Meanwhile some chemical material, either natural or synthetic, cheap and not useful as food for man or animal, capable of being applied as easily as starch, and having its desirable properties, may be discovered. It will require diligent search among the by-products and waste materials of many industries and a study of gums and extracts from plants or investigations into the possible modifications of such gums or extracts. It is not at all impossible, however, that some such material can be developed as there are at present several gums on the market whose possibilities have no doubt not yet been fully exploited. (Obviously this does not refer to British gum, or other so-called gums sold for sizing which really consist only of modified starches.) Such an extended research would no doubt be beyond the ability of any one mill to undertake, but if once entered upon by anyone sufficiently interested and carried to a conclusion, the results might be of a very great value.

Testing Materials

It is also quite legitimate to keep one's own interests in mind and a line of work that every mill can undertake either in its own or an outside laboratory is the examination by analysis of its supplies. The high prices now prevailing are a temptation to adulterations of even the common articles such as acids and alkalies, formerly too cheap to be profitably manipulated. If on account of the present scarcity of heavy chemicals it is found best not to make serious complaints it is worth something to know what dealers have taken advantage of their customers and later to treat them accordingly.

There is also more chance for work in connection with the dyestuff supply. Some colors, like sulphur black and methyl violets, are on the market in various strengths from a variety of makers. In these cases competitive money value tests should be made and may prove far more fruitful than the hair-splitting tests that were often run during the lively competition just before the war, when often only a cent or two per pound was at stake.

The numerous new colors continually appearing require to be tested carefully for strength, working properties and fastness, particularly as many of them are claimed to embody improvements over the colors first put on the market by our dye firms to satisfy the recent stringency. As a specific case, new reds of the nature of Benzo-purpurine or Delta-purpurine are now appearing to replace Congo red, with better shades and properties.

In conclusion, it is only fair to again recall what the chemists have done in the past three years in the textile field. The debt is most conveniently measured in terms of dyestuff factories. The number has grown from five to many times that number of establishments making either dyes or the necessary intermediates. The production is now fully ten times as great and may reach fifty million or more pounds as this year's total. The chemist has been growing into his

DICKS, DAVID COMPANY, Inc.
302 BROADWAY NEW YORK
Manufacturers of
FUCHSINE SOLUBLE BLUE METHYL VIOLET
METHYLENE BLUE SAFRANINE
as well as other ANILINE COLORS
Works: Waverly, New Jersey; Chicago Heights, Ill.
Distributors for: Essex Aniline Works; Reliance Aniline Chemical Co.
Offices: Chicago, Boston, Paterson, Greensboro

proper place in many industries and now at last into textiles where so many of the operations involve the action of chemical reagents on impurities in the fiber or upon the various fibers themselves, all of which are, strictly speaking, chemical materials.—*By Charles F. Goldthwait in the Textile World Journal.*

Fairly Large Selection of Dyes for General Work

There is a fairly large selection of dyes for the general work of dyeing yarns and pieces in solid shades, whatever process is used. The most adaptable yellow for all the chrome processes is generally sold as "alizarine yellow." This name covers a number of colors, none of which are either alizarine or anthracene derivatives, the majority being salicylic acid couplings with diazotized nitranilines or else pyrogallic acid condensation products. These yellows may be dyed in any of the three chrome processes and are remarkably fast to all influences. As with the acid dyeings the yellow element is the principal factor in the shade. A red is needed to prevent the blue or black from turning the shade to a green tone. The main consideration for the red used is that it shall dye evenly, and this seems to be the rarest quality of the available reds. Cloth red may only be used on a chrome mordant as the tendency to cloud the goods is very great, and on a chrome bottom the greatest care must be observed in regard to heating or the red will take on rapidly in spots. Omega Chrome Red and the Erio Chrome Reds are very satisfactory products and can be dyed by any of the three processes. Union Fast Claret is another excellent red of universal adaptability and remarkably fast, but we do not hear much of it at present. True Alizarine Red has again made its appearance, but it is not advisable to use the insoluble paste for shading, but the bisulphite compound, Alizarine Red S, would be quite suitable.

For the blue element there is a fairly large selection of blue-blacks and blues. The average chrome black of the Diamond or Palatine series, now on the market, while essentially after-chrome colors will dye on a chrome mordant and most of them will dye by the one-bath process. The dyeings are not as fast as when after-chromed, but are sufficient for goods that do not have to stand fulling. Blues of the Sulphon series are also available at present. They are difficult to dye level when used as acid colors, and after-chromed, but give less trouble in this respect when dyed on a chrome mordant or by the one bath process. Even the acid black, corresponding to Naphthol Blue-Black can be well utilized on mordant or after-chrome dyeings and the fastness to light will be sufficient for most purposes.

Much of the goods that are being dyed at present will be found to fall into one of the classes previously enumerated, but few of them are up to the strict requirements of the Government. At present there may be a tendency to be lenient and on account of the instant need for the goods to pass much which would otherwise be rejected. No one can tell when the specifications will be insisted upon more rigidly and it is well to consider how the color can be made to stand up to the most strict requirements.

We manufacture

Khaki Colors for Wool

Dye Products & Chemical Co., Inc.

Factory:
Newark, N. J.

200 Fifth Avenue
New York City

Before the war the fastest standard for 16-ounce Melton, for instance, had been dyed with a combination of vat dyes, but as these are not now obtainable we will only consider the best means at our command at present.

Practice in Best Mills

The practice in the best mills, for meltons, flannels, tops for sweater, hosiery, glove and other yarns and for blanket wools was to chrome both before and after dyeing. A mordant of 2 per cent. of bichromate and 1½ per cent. to 2 per cent. of crude tartar, boiled for one hour, was the common practice. This was not a well reduced mordant and a certain amount of reduction of the chromic acid evidently took place during the dyeing process. While chrome assistants are scarce and high in price, the previous remarks regarding the use of sodium bisulphite might well be applied here. After the mordanting a rinsing followed and gave an opportunity for the wool to cool slightly and for the dyebath to be started cool in order to assist evenness and penetration.

The principal dye as before is Alizarine Yellow, the fastest color of the combination. The ideal blue or black is Alizarine Blue-Black, also known as Alizarine Black S (No. 423 in Green's translation of the Schultz and Julius tables). In the absence of this we may use a chrome black of the Diamond Black F type, but allowance must be made for a slight loss of color which occurs during the later processes.

There is not much choice of reds at present and red is the weakest point in the combination at all times. Before the war the old specifications, requiring a test with lactic and citric acids, might as well have been worded, "No red dyestuff can be used excepting Chrome Fast Red G or R," for all other red or reddish brown dyes failed to pass this test successfully. Even true alizarine reds were rapidly decolorized, although they were much faster to light and the washing tests.

One of the next best reds was Diamine Red F, which although a cotton color is also a remarkable chrome red. It dyes very fast shades by any of the three processes, using chrome on wool, and levels well.—*Exchange.*

American Dyewood Co.

. . . *Manufacturers of* . . .

Dyewood Extracts

Chipped *and* Ground Dyewoods

Importers of

Aniline Colors *and* Indigo

NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT

Works: CHESTER, PA.

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MYRON DREW REESER, Managing Editor

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Advertising rates on request.

For the Good of the Industry

WE have heard some comments made throughout the trade concerning the amount of space which we have devoted to the proposed Dyestuff Association of America and in particular to the activities of those interests which have been prominent in promoting its formation. The question has been raised whether or not we were working in behalf of any particular interests and whether or not we were giving the matter more publicity than was justifiable on a non-partisan basis.

In reply to questions of this sort we can only say that the interest we have shown in this Association has been inspired purely in that we honestly believed it to be a step in the right direction, and in no sense because we were particularly interested in any of those persons or organizations which have been prominent in the movement. From our point of view it is not a question of what particular firms or individuals were responsible for starting the movement—the point is whether such an association, if formed, would be of benefit to the trade at large.

As to this latter point we believe there can be no question. It is undoubtedly true that an association of this sort, like any other entirely new undertaking, will meet with opposition from certain sources and that before a really effective organization can be completed, countless problems of varying degrees of complexity will have to be solved. There is probably no industry more filled with misunderstandings, petty jealousies, etc., than is the dyestuff industry, and it is self-evident that it will be a task of very considerable magnitude to harmonize all the conflicting interests. We believe, however, that it will eventually be possible to effect such harmony, or at least something approaching harmony, and that when this is finally accomplished the result will be decidedly beneficial to the trade at large, whether manufacturers, dealers or consumers.

It is possible that the present efforts may not go very far in this direction. After the meeting to be held on March 6th it will be possible to get a much better impression as to what has been accomplished and what is likely to be accomplished than it is at the present moment. Of one thing, however, we are confident — this is that an association of some sort ought to be formed and that it eventually will be formed. In the meantime any effort looking to this end is worthy of the support of all interests in the trade until it has been definitely shown that it is unworthy. Hence the AMERICAN DYESTUFF REPORTER will, as heretofore, continue to support this movement to the best of its ability until it is satisfied that no good can result from such support.

It would appear that some of those who have been receiving the AMERICAN DYESTUFF REPORTER during the past months have not read the editorials in its columns in which we have announced that we were about to request our friends to enter paid subscriptions to the AMERICAN DYESTUFF REPORTER beginning with March 1st. A certain number of subscription invoices were mailed a week ago and were very gratifying, there were some who seemed to be in doubt as to whether the bill applied to back subscription or was to take effect in the future.

We have rectified this error and future invoices which are sent out will be completely self-explanatory, but to those who failed to understand, we wish to say that it was our intention to have subscriptions entered at the present time to cover a period of one year from March 1st.

Worth While

WE are still of the opinion that a co-operative Publicity Association of Dyestuff Manufacturers to direct the placing of educational publicity will pay well.

We would again suggest that this matter be taken up at the meeting of dyestuff manufacturers to be held in New York City, March 6th, and that a schedule of cost and procedure be drawn up by an advertising man who knows the industry.

We would further advise the formation of a committee composed of advertising representatives of several large companies who would be given a specific sum to spend in educational advertising of products and developments in the industry.

The committee could censor all of the publicity given out by the association and could aid the press in eliminating the evil of misleading advertising.

The same thing is being done in a number of other lines, notably lumber, rice, fruits, paint, cranberries and other products. Surely the educational feature is necessary in the dyestuff industry and can be applied more readily to an infant industry than to one established for years.

Perhaps advice of this nature will be misunderstood, particularly as it comes from a trade publication, but there are honest trade papers even as there are honest dyestuff manufacturers.

Only by elimination can we find the reliable maker of colors and in the same way must we pass upon the trade publications, and a reliable paper should not fear the examination of a committee.

What would it mean to you who are in the market for dyestuffs and allied chemicals to be able to look upon the advertising of a company as being an announcement of products that they actually manufactured or controlled?

We offer for immediate delivery:

Domestic Colors

Malachite Green Crystals
Fuchsine Crystals
Safranine
and other acid basic and direct colors

Imported Colors

Patent Blue
Wool Green S
Chrysophenine

Fred Wetzel & Company, Inc.

21 Park Row, New York Clifton, N. J.

Madero Brothers Deny Knowledge of Quinine Substitution

OFFICIALS and employees of the entire organization of Madero Brothers, the well-known importers and exporters of chemicals, New York, are alike up in arms over the stigma which threatened to attach itself to the firm's reputation because of the action of Tonko L. Millic, an Austrian citizen and general manager of the concern, who was recently arrested and charged with the substitution of thirty-two cases of salicylic acid in place of a shipment of quinine intended for use in an Italian military hospital.

The cases in question were seized by officers of the Army and Navy intelligence Service at Pier 7, Brooklyn, New York. Millic's arrest followed, and at the time this issue went to press he was being held at New York Police Headquarters on the specific charge of grand larceny, on the allegation that he misappropriated $25,000 in connection with the transaction.

Ernesto Madero, the firm's President, who was in the South, was immediately reached on the long-distance telephone and started back at once. Pending his arrival, other officials of the company declined to discuss the affair in detail. When interviewed by a representative of the AMERICAN DYESTUFF REPORTER, Jose Miguel Bejarano, of the concern's Chemical Department, declared that a full statement would be forthcoming upon Mr. Madero's return.

"Mr. Madero is expected to arrive Sunday at the latest," said Mr. Bejarano. The officials of the company do not feel themselves authorized to make a statement until the arrival of the head of the firm. The only assertion they can make is that the present unfortunate affair concerns an employee of Madero Brothers only and does not affect the firm in the least. Details of the case as given by the New York *Times* follows:

"Officers of the Army and Navy Intelligence Service seized thirty-two cases of salicylic acid on Pier 7, Brooklyn, where it was awaiting shipment to an Italian military hospital in boxes marked quinine. The officers also arrested Tonko L. Millic, an Austrian citizen and general manager of Madero Brothers, importers and exporters, of 100 John Street. He is held at Police Headquarters on a charge of grand larceny on the allegations that he misappropriated $25,000 in connection with the sale of the alleged quinine to the benefactor of an Italian hospital.

"The officers also said that they intended to question Millic upon the substitution of the salicylic acid, which varies in cost between $1 and $1.50 a pound, for quinine, which costs about $1.20 an ounce. Although this salicylic acid was made by the action of a carbon dioxide on sodium phenolate, a form of carbolic acid, the officers said they did not think it likely that an experienced physician or hospital employe would make the mistake of administering it as quinine, because of the difference in appearance. They added, however, that chemists had told them that salicylic acid, if taken in a dose large enough or about fifty to one hundred grains, while it might not kill a

METHYL VIOLETS
SILK BLUE S
NIGROSINES
ZOBEL
Manufactured by
ZOBEL COLOR WORKS
SALES OFFICE: 38 Water St., New York FACTORY: Brooklyn, N.Y.

soldier, 'would make him sick enough to wish to go to a hospital.'

"The officers who made the arrest said that Millic several months ago had received an order for 2,000 pounds of quinine to be shipped to an Italian military hospital maintained by Felice Bisleri of Milan. A few days ago they said Millic sent a cable message that the 'quinine' was ready for shipment, and he received instructions to deliver it to the States Marine and Commercial Company, of 17 Battery Place, who would ship it from Pier 7. Employees of this company asserted the boxes had been received marked 'quinine.'

"Upon the delivery of the 'quinine,' it was asserted, a check for about $25,000 was drawn for a representative of the Madero Brothers, indorsed and turned over to Millic, who, the officers say, put the check in a bank to his own account. It was declared that payment upon the check had been approved by the American representative of Bisleri."

National Aniline & Chemical Company to Have New Home

The National Aniline & Chemical Co., which is to move about May 1 to its new building at 21 Burling Slip, will, with the Century Color Corp., a subsidiary of the National, occupy the entire ten floors of the building. The accounting department of the company will occupy the first and second floors. The managers of the drug, essential oils and gum departments will be located upon the third floor. On the fourth and fifth floors the salesmen, both for domestic and export business, will be found. The sixth floor will be given over to the correspondence department, the seventh to the advertising, publicity and filing departments, the eighth to the purchasing department and Board Room, and the ninth to the executive offices. On the tenth floor will be found the laboratories and the office of the technical director. The plan as drawn calls for 33 private offices. The building will be equipped with two electric elevators, pneumatic service, and every other necessary modern convenience.

A special meeting of the stockholders has been called for February 18, the date of the annual meeting, to vote on increasing the number of preferred shares that may be issued by 45,652 shares of the par value of $100 each, making the total of shares authorized 631,237, consisting of 235,247 preferred shares of the par value of $100 each, and 395,990 common shares without par value, and to increase the stated capital by $4,565,200, making the total stated capital as increased $25,504,650.

Notes of the Trade

Widenmann, Broiches & Co., Ltd., London, England, dealers in fine and heavy chemicals, etc., have opened an office in this city, at 52 Broadway, with G. A. Berenger in charge.

Heller & Merz, capitalized at $500,000 under New Jersey laws, has been authorized to do business in New York. P. Schnorrenberger is the company's representative in this city.

United States Conditioning & Testing Co.

NEW YORK 340 Hudson St. | **PHILADELPHIA** 205 Chestnut St. | **PATERSON** 220 Ellison St.

General Textile Testing

Dyestuff and Color Tests

Microscopic examinations **Photomicrographs**

The All State Chemical Manufacturing Co., New York City, has been incorporated with a capital stock of $5,000 by D. E. Huebner, W. Graveur and F. J Nice.

Stockholders of Grasselli Chemical Co., New York, at the annual meeting last week, voted to increase the capital stock from $20,000,000 to $50,000,000. The new 35,000 shares of common stock are to be held for sale to employes of the company. The board of directors was re-elected.

The Southern Chemical Co., El Paso, Tex., has been incorporated with a capital of $20,000, and will specialize in saline products. The incorporators are David Russek, Robert G. Anderson, R. J. de Moranbart and Marcus Russek, Jr.

An addition is being built to the plant of the British-American Chemical Co., Ridgefield Park, N. J., which will cost $13,000. The plant was recently taken over by the British-American company. Previously it was the property of the Tennessee Copper Co.

The DuPont Chemical Works will be ready to make deliveries of synthetic indigo about the 15th of the month.

The Providence Dye Works of Rhode Island was damaged by fire recently. The loss is estimated at $40,000.

Albert Baker, who resigned as assistant sales manager of the Davison Chemical Co., Baltimore, Md., to accept a Government position, will make a survey of the country's acid materials, production and other essential features.

The Millmor Chemical Works have been incorporated under the laws of Delaware to manufacture and sell chemicals. The capital is $110,000 and the incorporators are T. C. Miller and Edward Greenberg, Brooklyn, and W. I. N. Lofland, Dover, Del.

The Kall Manufacturing Company, Philadelphia, textile chemicals and allied products, is planning to increase its capital from $5,000 to $50,000 to provide for expansion.

The Chemical Specialties Corporation, Jersey City, N. J., has filed notice of an increase in its capitalization from $25,000 to $75,000 to provide for expansion.

Olive Drab Tests Before and Since War—Ultra Violet in Dye Fading—Piece Dyeing

The shade which represents the most popular color of to-day is not new in any sense of the word, but is an adaptation of a style that has been more or less popular for many years, particularly in men's light overcoat goods. The standard heavy shades, black, navy blue and brown, readily lent themselves to mixing with white stock and the resultant oxford, cadet blue and drab are probably the oldest shades to be found in fabrics.

In standardizing the color for military

Manufactured by
The Butterworth Judson Corp.
WORKS
Newark, N. J. Baltimore, Md.
Boston, Mass.

VICTORIA BLUE B
VICTORIA BLUE BASE
CRYSTAL VIOLET
CHROME BROWN

Phosgene Gas — Michlers Ketone
Dinitrobenzol — Benzyl Chloride
Picramic Acid — Salicylic Acid
Benzidin Sulphate and Base, Etc.

Manufactured by
THE ATLAS POWDER CO.
NITRITE OF SODA

Sole Distributors
Frank Hemingway, Inc.
115 Broadway, New York
LAKE COLORS ANILINE COLORS
PHARMACEUTICALS
OILS AND GREASES
ACIDS

purposes, account has been taken of both the low visibility and freedom from contamination by the dust and dirt, which was enjoyed by the khaki originally used by the British troops on their cotton uniforms in India. The very name khaki has reference to its resemblance to the earth in color. As a solid shade it cannot be considered attractive and the many difficulties in the way of obtaining a fast, level piece dye at the time of its first adoption have, no doubt, had much influence in the choice of a mixed fabric.

The shade at present seen in the uniforms of the privates is much too yellow to conform to either the Government standard or good taste. The need of the materials, the leniency of the various quartermasters, and the scarcity of certain dyes, is responsible for this departure from the proper shade of color. The production of this extreme yellow tone, which becomes still yellower during wear, causes a great loss in the low visibility feature, which is a character of the proper color.

While much latitude was permissible during the early days of our preparing, because the dyestuff situation was the determining factor, there is not so much excuse now since a number of American factories are producing dyes that will meet all the necessary requirements. There is a real obligation for the manufacturers of fabrics for the use of the army to produce standard goods for several practical reasons. The sight of a body of troops with a variety of colors in their uniforms detracts from their appearance and, while not a fatal defect, is not to be commended. The difference is not sufficient to produce an effective camouflage, while the sight of a man with four contrasting colors in his coat, trousers, blouse and overcoat, and sometimes blanket, makes the word "uniform" somewhat of a joke.

There is a standard shade for olive drab, the means of producing it from all-American materials now exist; any mill equipped for dyeing wool stock can obtain the proper shade and fastness, even if they have only open kettles worked by hand. There is no reason why the production of anything so essential for the equipment of our army should remain a monopoly for either dyestuff manufacturer or woolen mill operator. All the facts regarding the dyeing of this important shade should be public property in order to facilitate production. The small mill that has been running on shoddy goods may be able to do its bit with but little additional equipment if the dyer can get necessary information, and the small dyestuff factory can make important contributions if an outlet is provided.

Before the war all the American branches of the large German dye factories maintained a force of demonstrators, who worked out the mill dye house problems, apparently without charge. The elaborate sample cards, and instruction books, and ready-mixed-matched dyes did much to prevent the development of that initiative and reliance on the part of the dyer, which was a noted characteristic of the past generation. Under these conditions olive drab became somewhat of a monopoly, and under the old specifications the available dyestuff was narrowed down to one source of supply.

Tests Prior to War

We will pass over the specifications regarding stock, tensile strength, weight, etc., and confine our attention to the color tests. Prior to the war there were prescribed the following tests, and each lot submitted was expected to stand as well as the standard sealed sample furnished by the quartermaster.

Soap Test—The sample is to be boiled for ten minutes in a solution containing 80 grains of Ivory soap in one pint of water, then rinsed in pure water and dried.

Soda Test—The sample is to be boiled for ten minutes in a solution containing 10 grains of dry carbonate of soda in one pint of water, then rinsed and dried.

Lactic Acid Test—The sample is to remain immersed in lactic acid, U. S. P. (75 per cent) for 24 hours, then rinsed free of acid and dried.

Citric Acid Test—The sample is to remain immersed in a citric acid solution, which was about 10 per cent strength, for 24 hours and then rinsed and dried.

Light Test—The sample is to be exposed to the sun and weather for 30 days.

While the wording of these specifica-

tions does not follow the original exactly, the substance is the same. It is also understood that a different sample is used for each test and not one run through the whole series.

We can readily appreciate that the first two tests were intended to represent washing conditions, severe even for an army, in case the fulling and scouring in the mill had not been sufficient to remove the color or alter the shade. The two acid tests, however, are masterpieces. The citric acid was supposed to imitate the action of fruit juices in the tropics, and the lactic acid, it is said, represented perspiration. Both of these tests converted the wool itself into a hard pulpy mass that required a great amount of washing to restore its flexibility, and all dyes having a red element in their shade were decolorized, excepting Chrome Fast Reds G and R.

All the true alizarine reds, which were so much faster to light and washing, lost their color in a few hours and were not permissible under these tests. Some ordinary acid reds, which had no fastness either to light or ordinary washing, would stand the two acids indefinitely. Many reddish-toned chrome browns and all the chrome reds, except those mentioned, were more or less decolorized and caused the test to assume a greenish tone. In times of great need for the goods it was sometimes possible to use a few substitutes and have the goods passed, but the requirements were adhered to as closely as possible by the quartermasters. Shortly before the war a new standard was adopted for meltons, which, it was said, was dyed with vat dyes. The writer, having no first-hand knowledge of these goods, can make no further comment than to state that if the war had not cut off the supply of dyes and such a high standard had been insisted upon, we would have been entirely barred from the use of American dyestuffs.

Of course, we all feel that our soldiers should have the most serviceable goods obtainable, but when requirements are introduced that make the goods more expensive and necessitate dyeing processes that give colors that will long outwear the fabrics themselves, we naturally inquire for the reason. If the specifications bar all bidders on the contracts except a few, and such exclusion is not based on real merit, but on a technicality that involves the use of a proprietary dye that is not even made in this country, the answer to the inquiry is obvious.

This article was written by Dr. E. W. Pierce of the United States Conditioning and Testing Company, New York City, and appearing in The Chemist-Analyst.

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